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APPLICATION NUMBER	FILING DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKET NO.
08/488,164	06/07/95	KOPCHICK	J 7707-015

EXAMINER	
SAOUD, C	

ART UNIT	PAPER NUMBER
1812	7

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DATE MAILED: 09/16/96

This is a communication from the examiner in charge of your application.
COMMISSIONER OF PATENTS AND TRADEMARKS

OFFICE ACTION SUMMARY

☐ Responsive to communication(s) filed on _____

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 D.C. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), ~~or thirty days~~, ~~whichever is longer~~, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

☒ Claim(s) 1-9 is/are pending in the application.

Of the above, claim(s) _____ is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) 1-9 is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☒ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been

☐ received.

☐ received in Application No. (Series Code/Serial Number) _____.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____.

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☐ Notice of Reference Cited, PTO-892

☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). 5

☐ Interview Summary, PTO-413

☒ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

-- SEE OFFICE ACTION ON THE FOLLOWING PAGES --

★ U.S. GPO: 1996-409-290/40029

DETAILED ACTION

Specification

Abstract:

1. Applicant is reminded of the proper content of an abstract of the disclosure.

A patent abstract is a concise statement of the technical disclosure of the patent and should include that which is new in the art ***to which the invention pertains***. If the patent is of a basic nature, the entire technical disclosure may be new in the art, and the abstract should be directed to the entire disclosure. If the patent is in the nature of an improvement in an old apparatus, process, product, or composition, the abstract should include the technical disclosure of the improvement. In certain patents, particularly those for compounds and compositions, wherein the process for making and/or the use thereof are not obvious, the abstract should set forth a process for making and/or use thereof. If the new technical disclosure involves modifications or alternatives, the abstract should mention by way of example the preferred modification or alternative.

The abstract should not refer to purported merits or speculative applications of the invention and should not compare the invention with the prior art.

2. The abstract of the disclosure is objected to because it is not directed to the claimed invention (DNA encoding growth hormone antagonists). Language describing methods of treatment should not be included because the claimed invention is not a method of treatment. Correction is required. See MPEP § 608.01(b).

Figures:

3. Figures of the instant application are presented on multiple separate panels (Figures 4, 8, and 9). 37 C.F.R. § 1.84 (U)(1) states that when partial views of a drawing

which are intended to form one complete view, whether contained on one or several sheets, must be identified by the same number followed by a capital letter. For example, the 3 panels of drawings which are labeled "Figure 9" should be renumbered "Figures 9A, 9B, and 9C". Applicant is reminded that once the drawings are changed to meet the separate numbering requirement, the specification should be amended as well to change the Brief Description of the Drawings and the rest of the specification accordingly. If, for example, Figure 9 is divided into Figures 9A, 9B, and 9C, then the Brief Description and all references to this figure in the specification must refer to Figures 9A, 9B, and/or 9C. (Also, Figures 4 and 8 are properly labeled but are not referred to properly in the specification. Correction of the specification is required.)

Incorporation by Reference:

4. An application as filed must be complete in itself in order to comply with 35 U.S.C. 112. Material nevertheless may be incorporated by reference, Ex parte Schwarze, 151 USPQ 426 (Bd. App. 1966). An application for a patent when filed may incorporate "essential material" by reference to **(1) a U.S. patent** or **(2) an allowed U.S. application in which the issue fee has been paid**, subject to the conditions set forth below. "Essential material" is defined as that which is necessary to (1) describe the claimed invention, (2) provide an enabling disclosure of the claimed invention, or (3) describe the best mode (35 U.S.C. 112). In any application which is to issue as a U.S. patent, **essential material may not be incorporated by reference to** *(1)* patents or applications published by foreign countries or a regional patent office, *(2)* non-patent publications, *(3)* a U.S. patent or application which itself incorporates "essential material" by reference, or *(4)* a foreign application. See In re Fouche , 439 F.2d 1237, 169 USPQ 429 (CCPA 1971).

5. *Nonessential subject matter* may be incorporated by reference to **(1)** patents or applications published by the United States or foreign countries or regional patent offices, **(2)** prior filed, commonly owned U.S. applications, or **(3)** non-patent publications. Nonessential subject matter is subject matter referred to for purposes of indicating the background of the invention or illustrating the state of the art.

6. Mere reference to another application, patent, or publication is not an incorporation of anything therein into the application containing such reference for the purpose of the disclosure required by 35 U.S.C. 112, first paragraph. In re de Seversky , 474 F.2d 671, 177 USPQ 144, (CCPA 1973). In addition to other requirements for an application, the referencing application should include an identification of the referenced patent, application, or publication. Particular attention should be directed to specific portions of the referenced document where the subject matter being incorporated may be found.

7. **The incorporation of essential material by reference to a foreign application or foreign patent or to a publication inserted in the specification is improper.** Applicant is required to amend the disclosure to include the material incorporated by reference. The amendment must be accompanied by an affidavit or declaration executed by the applicant, or a practitioner representing the applicant, stating that the amendatory material consists of the same material incorporated by reference in the referencing application. In re Hawkins , 486 F. 2d 569, 179 USPQ 157 (CCPA 1973); In re Hawkins , 486 F. 2d 579, 179 USPQ 163 (CCPA 1973); In re Hawkins , 486 F. 2d 577, 179 USPQ 167 (CCPA 1973).

8. The attempt to incorporate subject matter into this application by reference to "all patents and publications cited in this specification" (page 11, lines 12-13 and page 55, lines 22-23 is improper because publications cannot be incorporated by reference if they contain essential material. Based on the broad statement, the Examiner cannot determine which material, if any, is essential for the practice and enablement of the claimed invention. Applicants should evaluate this statement and determine which material is essential and if it needs to be incorporated by reference or if the

incorporation by reference is proper (i.e. essential material contained within a printed publication which is not a U.S. Patent cannot be incorporated by reference). Applicants should keep in mind that only essential material contained in U.S. Patents and U.S. applications for which the issue fee has been paid can be incorporated by reference.

Claim Rejections - 35 USC § 112

9. Claims 5-9 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for DNA encoding human growth hormone antagonists in which amino acid Gly 120 is deleted or substituted with another amino acid, does not reasonably provide enablement for deletions or substitutions of at least one other position outside the third alpha helix of human growth hormone. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with these claims.

Claim 5 is directed to human growth hormone antagonists "in which at least one other position outside the third alpha helix of human growth hormone is deleted or substituted with an amino acid, said polypeptide having growth hormone antagonist activity". This language would encompass embodiments of deletion mutants which

only contain the third alpha helix of human growth hormone. Furthermore, there is no guidance as to which amino acids may be substituted or deleted from the polypeptide (except that they be outside the third alpha helix) or which amino acids must be retained for said antagonist activity. The specification provides some examples of which amino acids may be deleted or substituted, but these examples do not include deletions or substitutions outside of the third alpha helix (i.e. the third alpha helix is described as amino acids 106-129 or even 109-126 of bovine growth hormone). The instant invention is DNA encoding growth hormone antagonists, said antagonists being receptor antagonists (i.e. the polypeptide binds the receptor but does not have growth promoting activity). The specification states that amino acids at positions 10, 58, 64, 172, 174, 175, and 176 of human GH are important for receptor binding (page 17, lines 10-13). The specification provides no guidance as to which (or any) of these amino acids are necessary for receptor binding, which would also be necessary for antagonistic activity. The specification does not address the substitutions of amino acids with cysteine residues (which could lead to undesirable disulfide bond formation). The specification does not provide guidance as to which amino acids could be substituted with charged amino acids. All of these substitutions (within a binding domain, cysteine residues, charged amino acids) can all have very profound effects on the activity and conformation of the polypeptide. The specification does not provide guidance for one

of ordinary skill in the art to make and use the claimed invention (of claim 5), nor does the specification provide examples of growth hormone antagonists which meet the limitations of this claim. Although examples are not necessary for enablement, the lack thereof in light of the lack of guidance and the known unpredictability in the art would lead to undue experimentation by one of ordinary skill in the art in order to use the claimed invention. Therefore, the claims are broader than the enabling disclosure and it would require undue experimentation to make and use the claimed invention, absent clear and convincing evidence to the contrary.

10. Claims 1-4 and 7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 is directed to a DNA encoding a polypeptide in which the amino acid Gly 119 is deleted or substituted with ***an*** amino acid. This language could be understood as the glycine of amino acid position 119 is substituted with another amino acid glycine at position 119. This substitution would not accomplish anything useful because one would end up with the exact same DNA one started with. Although there is the limitation of the polypeptide having growth hormone antagonist activity, the addition of the word "another" in place of the word "an" would clarify the claim.

Claims 2-4 are unclear and indefinite because there is no antecedent basis for "the growth hormone antagonist" in claim 1. Claim 1 recites "said polypeptide having growth hormone antagonist activity" and never does recite a growth hormone antagonist. Claim 1 could be rewritten to provide proper antecedent basis for the phrase or claims 2-4 could be rewritten to claim "the DNA of claim 1 wherein the polypeptide ...", for which there is proper antecedent basis. However, correction is required. Such correction would obviate this ground of rejection.

Claims 2-4 are also unclear because of the designation of Gly 120 with the claims depending on claim 1 which recites the amino acid Gly 119. The examiner understands that Gly 120 of human growth hormone is the corresponding amino acid for Gly 119 of the bovine growth hormone, but it is not clear that the polypeptide of claims 2-4 only has a substitution (or deletion) of the Gly at position 120 and not also at position 119. It may be more appropriate to write the claims (2-4) as independent claims or to be sure to state that Gly 120 is the corresponding amino acid to Gly 119 of claim 1.

Claim 7 is unclear and indefinite because of the phrase "in which amino acid Gly 120 is deleted or substituted with an amino selected...". It appears that the word "acid" should be inserted between "amino" and "selected". An amendment of this nature would obviate this ground of rejection.

11. No claim is allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christine Saoud, Ph.D., whose telephone number is (703) 305-7519. The examiner can normally be reached on Monday to Friday from 8AM to 4PM.

The fax phone number for this Group is (703) 308-0294. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0196.

Christine Saoud, Ph.D.
September 9, 1996

JOHN ULM
PRIMARY EXAMINER
GROUP 1800